

GEORGIA INSTITUTE OF TECHNOLOGY
OFFICE OF CONTRACT ADMINISTRATION
SPONSORED PROJECT INITIATION

Date: February 18, 1981

Project Title: Improved Objective Speech Quality Measures for Low Bit Rate
Speech Compression

Project No: E-21-650

Project Director: Dr. Thomas P. Barnwell, III

Sponsor: National Science Foundation

Agreement Period: From 1/15/81 Until 6/30/82 (Grant Period --
entire period charges can be incurred)

Type Agreement: Grant No. ECS-8016712, dated 2/6/81

Amount: \$41,547 NSF E-21-650
4,056 GIT E-21-361
\$45,603 TOTAL

Reports Required: Annual Progress Report(s); Final Project Report

Sponsor Contact Person (s):

Technical Matters

NSF Program Official
Elias Schutzman
Program Director for Electrical Optical
Communications
Division of Electrical, Computer, and
Systems Engineering
Directorate for Engineering and Applied
Science
National Science Foundation
Washington, D. C. 20550
202/357-9619

Contractual Matters

(thru OCA)

NSF Grants Official
Ms. Mary Frances O'Connell
AAEO/EAS Branch, Section II
Division of Grants and Contracts
Directorate for Administration
National Science Foundation
Washington, D. C. 20550
202/357-9602

Defense Priority Rating: N/A

Assigned to: Electrical Engineering (School/Laboratory)

COPIES TO:

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Division Chief (EES)
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Library, Technical Reports Section
EES Information Office
EES Reports & Procedures
Project File (OCA)
Project Code (GTRI)
Other Mr. C. E. Smith

SPONSORED PROJECT TERMINATION/CLOSEOUT SHEET

Date 10/24/83

Project No. E-21-650

School Mark Elect. Engr.

Includes Subproject No.(s) N/A

Project Director(s) Dr. T.P. Barnwell

GTRI ~~XXXX~~

Sponsor NSF, Washington, DC

Title: Improved Objective Speech Quality Measures for Low Bit Rate Speech Compression

Effective Completion Date: 6/30/82 (Performance) 6/30/82 (Reports)

Grant/Contract Closeout Actions Remaining:

- ☒ None
- ☐ Final Invoice or Final Fiscal Report
- ☐ Closing Documents
- ☐ Final Report of Inventions
- ☐ Govt. Property Inventory & Related Certificate
- ☐ Classified Material Certificate
- ☐ Other _____

Continues Project No. _____

Continued by Project No. E-21-622

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RESEARCH PROGRESS

The expenditure of funds on this research grant was initiated in the Spring quarter of 1981. Since that period, the research effort has been focused in four areas: the study of new objective measures for speech quality testing using the existing data base; the study of iterative algorithms for quantizer design; the study of the use of analytic signals for LPC analysis; and the development of a micro-coded array processor for implementing objective quality measures.

Progress in the four areas mentioned above has not been uniform. In particular, most of the progress has occurred in the first and fourth area while work in the second and third areas is just now beginning.

In the area of new objective speech quality measures, the emphasis in this period has been on the examination of new parametric variations of simple speech quality measures as indicated by previous research. In the past, some fifteen hundred measures had been studied. Since the beginning of this research, an additional 450 measures have been studied. Also during this period, this work has resulted in three invited conference papers and one journal paper currently under review.

In the area of hardware aides for objective measure computation, a two board micro-coded arithmetic processor with programmable control store has been designed and is currently being implemented. At this stage in the development. the printed circuit layouts have been completed, both boards have been constructed, and the system is being systematic retested. This hardware should be available for use in the speech quality measure research by the first of the year.

Currently. there are three doctoral students associated with this research All three students are in the first six months of their doctoral programs. and only one of them is currently being supported on this grant It is expected that at least one of the other two will be supported after their current fellowships expire